

REMARKS

Regarding the Restriction Requirement:

The applicants respectfully traverse the restriction requirement of the Group I (Claims 1-8, 10-17) and the Group II claims (Claim 9). Further, the Applicant traverses the withdrawal from further consideration claims 18-20.

With regard to the Restriction Requirement between the Group I and Group II claims, it is not understood how these can be severed and considered separately. As a review of claim 1 reads, it is directed towards a cladding which includes a drainage means, a waterproofing membrane which has been applied thereto by spraying, and a layer of concrete. Claim 9 is directed towards a composite waterproofing system for application to a surface consisting of a drainage means, and a sprayed waterproofing membrane. It is not understood why this subject matter appears to be divisible by the Office, or why it would be an undue burden upon the Office to embark upon a further or separate search. Indeed, as can be seen by correlating the common elements in that these claims, the "partially overhanging substrate" of claim 1 is analogous to the "surface" of claim 9, the "drainage means" of claim 1 is analogous to the "drainage means" of claim 9, and the "waterproofing membrane applied thereto by a spraying" of claim 1 is analogous to the "sprayed waterproof membrane" according to claim 9. Accordingly, reconsideration of the Restriction Requirement entered by the Office is respectfully requested in view of the foregoing arguments.

With regard now to the withdrawal from consideration of claims 18-20, again the applicant respectfully traverses this determination by the Office. In view of the foregoing arguments relating to claims according to Group I and Group II, it is believed that the withdrawal of the consideration of claims 18-20 is improper.

The applicant nonetheless points out that amendments to claims have been entered which are believed to at least partially address the Restriction Requirement, and withdrawal of consideration by the Office of Claims 18 - 20. It is respectfully requested it had no further divisions of subject matter into several groups claims be entered, as such is believed inappropriate in view of the foregoing remarks.

Regarding the objection to the specification:

As noted above, the title of the application has been amended. The new title is believed to address and overcome the outstanding rejection.

Regarding the rejection under 35 USC 112:

The applicant respectfully traverses the rejection raised by the Office. As amended in the prior Amendment reveals, claim 11 properly reads:

“11. A method of providing a waterproof cladding on a partially-overhanging substrate according to claim 8, wherein the drainage means is a plastics mesh.”

It is not understood why this objection was therefore raised by the Office as the objected-to language cited by the Office had been canceled in the prior amendment.

Reconsideration of the propriety of this outstanding rejection, and its withdrawal is therefore respectfully requested.

Regarding the rejection under 35 US 102(b) in view of US 4695188 to Pulkkinen:

The applicant respectfully traverses the rejection in view on the U.S. 4695188 to Pulkkinen.

Turning with detail to the Pulkkinen reference, Pulkkinen succinctly recites the crux of his invention at column 2, beginning at line 5 wherein he states:

“The rock cistern or tunnel wall structure of the invention is mainly characterized in that there is, between the blasted rock surface and the steel-reinforced water-tight sprayed concrete layer, a sprayed concrete layer permeable to water and serving as a ground water-conducting layer.

The novelty of the invention is the use of a sprayed concrete layer with good water conductivity as a layer eliminating the ground water pressure, under the sprayed concrete layer proper.”

Pulkkinen later recites the utility of his invention, at column 2, line 29 *et seq.*:

“Applications of the present invention are pressurized stores of natural gas under pressure, aviation kerosene stores, grain silos and stores and pressure tanks for various toxic substances.”

With regard to his actual construction, Pulkkinen describes this in detail with reference to his Figures 1 and 2. As can be seen from the description provided by Pulkkinen beginning at column 2, line 64, his construction comprises a series of layered materials which are placed upon a blasted rock surface. Namely, the first layer adjacent to the blasted rock surface is a sprayed concrete layer permeable to water, upon which is provided a steel-reinforced watertight-sprayed concrete layer which serves as a supporting layer. Upon this steel-reinforced watertight-sprayed concrete layer is then provided a reinforced plastic lining. Pulkkinen also recites that for his tightly sealing lining, various coatings such as plastic, steel, fiber concrete, etc. can also be used.

In view of the foregoing, the Applicants traverse the characterization of the Pulkkinen reference given by the Office at page 6 of the Office Action. The Office states that:

"Pulkkinen discloses a cladding on a partially-over hanging substrate which comprises, in sequence starting from the substrate; a drainage means; a water-proofing membrane and a layer of reinforcing concrete. The substrate is given an initial layer of concrete. With regards to claim 16, concrete is considered as the fastening means used to secure said waterproofing membrane to said drainage means."

Clearly, it is the Applicant's view that the Office's interpretation of Pulkkinen is inconsistent with what is actually recited. Pulkkinen provides no intermediate waterproofing membrane between his two layers of concrete. Further, Pulkkinen's "drainage means" is not a hydrophilic sheet, web or mesh, but rather is limited to a highly porous concrete composition which is sprayed onto the rock surface. Pulkkinen's sole sealing layer is on the exterior, that is to say the topmost layer of his layered construction which is on the face which faces the interior of the cistern. Pulkkinen's construction is impervious, and would need to be due to the fact that it is used for the storage of pressurized liquids and gases. While useful in his own right, Pulkkinen is not the same, nor is it substantially similar to the construction provided by the present Applicant, and presently claimed.

The attention of the Office is directed to the Applicant's first claim. Thereon, the Applicant recites that they provide a cladding which comprises: in sequence starting from the substrate;

a drainage means;

a water-proofing membrane which has been applied thereto by spraying; and

a layer of concrete.

As noted above, Pulkkinen does not provide nor teach an intermediate waterproofing membrane. It can also be fairly stated that Pulkkinen's construction, and his recited applications for using his construction would not suggest the types of construction taught by the present Applicants. Clearly, Pulkkinen's primary concern is to provide a storage space or a storage volume for the retention of a liquid or gas, usually a pressurized liquid or gas. Thus, it is essential to his type of cladding construction that the face which would come in contact with such a liquid or gas be liquid-tight or alternately gas-tight. Such would automatically then exclude from the mind of one of appropriate skill in the art, the utility of a porous layer (concrete) on the interior wall facing the interior volume. Any such porous layer would likely defeat the whole purpose of Pulkkinen's cisterns or tunnels and would not be considered at the outset. The porosity of such materials would defeat the benefits of the storage capability of Pulkkinen's constructions.

Accordingly, in view of the foregoing reconsideration and propriety of the outstanding rejection under 35 USC §102 is respectfully requested.

Regarding the rejection under 35 USC 103 (a) in view of WIPO 98/24738 to MBT in view of US 3858400 to Bernold:

The applicants respectfully traverse the rejection lodged by the Office in view of the MBT and Bernold documents.

Turning first to the MBT reference, therein is described a waterproof concrete structure for cladding an excavated surface. This cladding necessarily includes a waterproofing membrane, applied by spraying, between two layers of concrete. This membrane is described as being of a plastic material but the cladding construction according to the MBT document does not have any drainage means. The construction according to the MBT document is one which is particularly useful where little or no water seepage is encountered from an excavated rock face or other substrate, and as such the necessity of having a "drainage means" need not arise. As such, a skilled artisan, considering the MBT document and the construction shown therein would not need to consider the problem of water running from an excavated rock face. Therefore, there would be no impetus or suggestion to modify the cladding taught in the MBT document to solve

a problem which it does not recite or face. At best, as a clear reading of the MBT document indicates, its cladding construction is one which provides a waterproofing film formed of a coalesable sprayed composition sandwiched between two cementitious layers.

With regard now to the "Response to Arguments" entered by the Office Action, namely at page 8 of the outstanding Office Action, the Applicants respectfully disagree with the Office's characterization of the MBT document. With regard to the mention of "drainage means", this is recited at page 1, in the first full paragraph beginning at line 6. A careful reading of this paragraph however, does not indicate that there is a "drainage means" but rather that waterproofing is

" . . . typically achieved either by providing drainage or by firstly injecting fissures in the rock with materials such as cement, microcement and reactive resin, this being followed by a layer of shocrete. To this layer is applied a waterproof membrane, and to this membrane is applied a further layer of shocrete or in situ concrete. The water -proof membrane is typically a pre-fabricated sheet of waterproof polymeric material which is anchored in place by, for example, anchoring bolts. This result is thus a "sandwich" construction."

The skilled artisan would understand the remarks in the paragraph to be merely a recitation of the well-known practice of stopping water by "plugging" an excavated rock face. This is what is referred to in the paragraph reproduced above. Once such water is halted, thereafter the typical prior art practice would be to provide a polymeric waterproof membrane which has been provided in the form of sheets, bands, strips, and the like. These are anchored by the use of nails, pins, anchoring bolts, or other fastening members and it is onto this polymeric membrane a further concrete layer provided. None of these elements are "drainage means" in that they provide flow directed channels for water or other liquids which may be exuded from the excavated rock face. Also, as a reading of the aforementioned paragraph indicates, there is no provision that a first concrete layer is applied directly to the excavated surface, and thereafter a "drainage means" is applied to the surface of this first applied layer. The prior art practice contemplates and practices only the localized stoppage of water and, the waterproof membrane does not include the flow directing means such as are provided in preferred embodiments of the present invention.

With respect now to US Patent No. 3,858,400 to Bernold, therein is described a cladding construction for use in tunnel boring. Bernold's cladding construction includes, *inter alia*, reinforcement mats. In certain embodiments, Bernold's reinforcement mats may include perforated drainage tubes (18) which are placed within reinforcing angle irons (5) of his reinforcement mats. In use, Bernold's reinforcement mats are sandwiched solely between two layers of concrete.

Notwithstanding the assertions of the Office, Bernold does not provide a cladding construction which is particularly proximate or relevant to that which provided and claimed by the present applicant. The applicants believe that notwithstanding the position taken by the Examiner, their invention remains non-obvious over the prior art of record.

First, there is no motivation to utilize the reinforcements mats of Bernold ostensibly for removing water in the cladding construction provided by MBT for the fact that the control of flow direction of seeping water is not a problem anticipated or addressed by the MBT cladding. The sprayable membrane of the MBT construction are useful in keeping water and retained within the excavated rock surface, particularly as it directly applied to the excavated rock surface. It does not provide any useful flow directing capabilities for collecting water, and thereby channeling it to sump.

With regard to appropriate legal standards of review, the Office is reminded that obviousness is tested by what combined teachings of prior art references would have suggested to those of ordinary skill, not whether particular combination of elements from such references might have been. See In re Fine 5 USPQ2d 1596 (CAFC, 1988). As there is no teaching or suggestion within the MBT reference that a "drainage means" is necessary for directing the flow of seeping water, there is no suggestion from this prior art document dealing with this specific issue.

Second, even if one skilled in the art were to combine the drainage means of the Bernold with the sprayable membrane of the MBT document, the resultant "structure" would not function. Bernold's reinforcement mats are in the forms of meshes which have open spaces between their members. Such is much more akin to a sieve in its efficacy in retaining water, and is not as efficacious as a non-porous membrane. Thus any attempt to spray on the membrane

taught by the MBT reference would in fact, defeat any drainage from the tubes of the Bernold structure, and also fail to deny the passage of water across the reinforcement mesh.

The Office is reminded that the determination of obviousness under 35 USC 103 requires an analysis of claimed invention *as a whole*, and focusing on obviousness of substitutions and differences instead of on invention as whole, is legally improper way to simplify that determination. Gillette Co. v. S.C. Johnson & Son Inc. 16 USPQ2d 1923 (CAFC, 1990).

Third, it remains the applicant's view that even if one were to combine these two prior art references, the drainage tubes described in the US patent to Bernold in addition a waterproofing membrane of the MBT reference would not amount to the innovative drainage means provided by the present applicant. Specifically the prior art documents fails to teach or suggest the multi-layered structure wherein a flow-channeling material such as a drainage mesh or drainage fleece bounded on one face with a non-porous membrane is placed against a porous rock surface or a porous shocreted surface such to provide flow channeling of seeping water. None of the prior art speaks of fibrous layers, especially not in use with its drainage means, in the form of geotextile fibers, specifically one hydrophilic and one hydrophobic layer.

Accordingly reconsideration of the outstanding rejections, and withdrawal of the prior art documents from further consideration are solicited.

Should the Office believe that telephonic communication would advance the prosecution of the instant application, they are invited to telephone the undersigned at the number given below.

Attached is a marked-up version of the changes being made by the current amendment.



Version with markings to show changes made

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TC 1700

In the specification:

The title of the application has been amended. The prior title:

WATERPROOF CLADDING

Has been canceled and the title amended to read:

WATERPROOF CLADDING CONSTRUCTION AND METHOD OF PROVIDING THE SAME

In the claims:

Claim 18, 19, 20 has been amended as follows:

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18. (Amended) A cladding on a partially-overhanging substrate according to claim 1

wherein the drainage means is a [A] drainage device consisting of a multi-layered structure comprising:

- a plastics mesh;
- an at least partially waterproof layer, applied by spraying; and,
- a fibrous layer.

19. (Amended) A cladding on a partially-overhanging substrate according to claim 1

wherein the drainage means is a [A] drainage device consisting of a multi-layered structure comprising:

- layers of geotextile fibrous materials;
- a waterproof film, wherein said film is located between said layers of geotextile fibrous materials.

20. (Amended) A cladding on a partially-overhanging substrate according to claim 1 wherein the

drainage means is a [A] drainage device according to claim 19, wherein the geotextile fibrous materials consists of at least one hydrophilic layer and one hydrophobic layer.

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GROUP 3000

Applicant : Rolf Brandenberger et
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Applicant asks that all claims be allowed. Enclosed is a \$380 check for the Petition for Extension of Time fee. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 30 May 2002

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